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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/402,232	09/30/1999	RAINER ESKUCHEN	H-2849-PCT/U	5687

23657 7590 11/18/2002

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EXAMINER
MAIER, LEIGH C

ART UNIT	PAPER NUMBER
1623	24

DATE MAILED: 11/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/402,232	Eskuchen
Examiner	**Art Unit**
First Last	1234

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Aug 28, 2002* .

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *25-37* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *25-37* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Status of the Claims

Claims 25-37 are pending. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. **Prosecution is hereby reopened.**

Claim Rejections - 35 U.S.C. § 112

Claims 25-37 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

The process recited in the independent claim 25 comprises the limitation of ". . .drying the glucose sirup/fatty alcohol suspension at a temperature gradient of from about 70 to 120°C to form a dried glucose sirup/fatty alcohol suspension. . ." [Step (e) of the process] This is a new limitation that was added in the new claim, submitted August 1, 2001 and unchanged when this claim was amended January 3, 2002. The examiner does not find support for this limitation in the specification as originally filed. There is a reference to the use of a temperature gradient, but this appears to be in the *reaction* step and not the *drying* step. See page 5, lines 10-13 and original claim 7.

Claim Rejections - 35 U.S.C. § 103

The claims are drawn to a process of making alkyl or alkenyl oligoglycosides, the process comprising the formation of a glucose syrup/fatty alcohol suspension that is then dried. The reaction mixture is dried at a temperature gradient of from about 70 to 120°C to form dried suspension. The process further comprises the subsequent addition of an acid catalyst to the dried suspension. The suspension reacts to form alkyl and/or alkenyl oligosaccharides. Other dependent claims recite further limitations major among them being: **(1)** solids content of the glucose syrup; **(2)** wt% of monomeric glucose; **(3)** preheating fatty alcohol; **(4)** ratios of reactants; and **(5)** reduced pressure.

Claims 25-32 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCURRY et al (US 4,950,743).

McCURRY teaches the preparation of alkylglycosides, the process comprising preparation of a mixture of fatty alcohols (C_8 to C_{20}, saturated or unsaturated - see col 2) and glucose monohydrate. See particularly Example 1. The reference is silent regarding the temperature at which the suspension is prepared. However, according to convention, when a temperature is not stated, it is assumed to be room temperature. Therefore, McCURRY teaches a "preheating" temperature in the range recited in the claims. The glucose monohydrate used would be considered a "solid glucose syrup" (see specification at page 3, lines 6-7) comprising 91.8 wt% of monomeric glucose. The exemplified molar ratio of glucose to alcohol is 1:2.5. The

reference further teaches a range of glucose/alcohol ratios of about 1:1.5 to about 1:10. See col 2, lines 24-26. In the example, the mixture is heated to about 60-65°C and then increased to the reaction temperature of about 100°C thereafter, resulting in a dried glucose/fatty alcohol suspension. The heating of the suspension from one temperature to another comprises a "temperature gradient." Drying is followed by addition of aqueous solution of acid catalyst (acid catalyst is about 3-4 wt% of the mixture) to catalyze the reaction, resulting in alkylglycosides.

McCURRY does not teach the use of a "supercooled" glucose syrup or "preheated" (above room temperature) fatty alcohol to prepare the suspension.

It would be obvious to one having ordinary skill in the art at the time the invention was made to use the reactants in the recited form. The artisan would be motivated to use glucose syrup in the form of an aqueous solution and a preheated alcohol to facilitate the mixing of the initial suspension. That is, mixing two liquids at elevated temperature would result in a more rapid mixing of all components than combining a solid with a liquid at a lower temperature. The reference teaches that glucose may be used in any convenient form (see col 2, lines 12-24) and that after mixing the glucose and the fatty alcohol, water is removed from the mixture, as required in the instant process. Therefore, in the absence of unexpected results, the form of the glucose in the initial mixture would not be considered inventive. Further, it would be within the scope of the artisan to optimize the amount of solids (concentration) in the syrup.

McCURRY does not explicitly exemplify the full range of the temperature gradient recited in the claims - the high temperature in the gradient is 100°C. However, in the paragraph

bridging col 2 and 3, McCURRY teaches that the optimum temperature of acetalization ranges from about 85° to 120°C, and that at temperatures greater than 120°C, side reactions proceed faster than the primary reaction. It would be within the scope of the artisan to balance maximizing the rate of reaction (using a temperature up to 120°C) and minimizing side reactions (using a temperature not significantly greater than 120°C). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to heat the initial suspension to a temperature up to about 120°C to conduct the reaction, the process thereby comprising the recited temperature gradient.

The cited example in McCURRY does not explicitly state that the reaction is carried out under reduced pressure. However, the reference teaches that it is prefered to do so. See col 7, lines 47-53.

It would have been obvious to one having ordinary skill at the time the invention was made to conduct the reaction at reduced pressure as McCURRY had taught that doing so facilitates the removal of excess alcohol from the reaction.

Claims 26, 29, and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCURRY et al (US 4,950,743) as applied to claims 25, 27, 28, 32, and 37 above, and further in view of GRUTZKE et al (US 5,648,475).

The invention is as set forth above. Dependent claims 33-36 further require carrying out the reaction discontinuously in one or more stirred tank reactors under reduced pressure.

McCURRY teaches as set forth above. The reference does not teach the use of one or more tank reactors under the conditions set forth in claims 33-36.

GRUTZKE teaches a process for preparing alkyl glycosides that may be performed discontinuously in a cascade of reactors. See col 3, lines 19-32. It would have been obvious to one having ordinary skill in the art to have performed the instant process in a cascade of stirred reactors. The artisan would be motivated to conduct the process in a series of reactors, as GRUTZKE had taught that a series of tank reactors has utility in this process. The series of reactors give the artisan the ability to fine-tune the conditions, such as pressure, necessary to optimize the process at every step. In the absence of unexpected results, it would be within the scope of the artisan to determine the optimum number of reactors and the optimum pressure at each reactor with routine experimentation. There does not appear to be a difference between the use of a "pressure gradient" and simply optimizing the reaction pressure at each stage of the reaction sequence. It would be obvious to perform the first step of the process (drying the suspension) in the first reactor, as this is the first step in the process.

Further regarding claims 26 and 29, although these limitations would be considered obvious over the teachings of McCURRY alone, it is further noted that GRUTZKE teaches the use of an aqueous glucose syrup and preheating the fatty alcohol in the process of preparing alkyl glycosides. See col 2, lines 39-41 and paragraph bridging col 2-3. It would be within the scope of the artisan to optimize the glucose concentration and preheating temperature, respectively, with routine experimentation.

Examiner's hours, phone & fax numbers

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh Maier whose telephone number is (703) 308-4525. The examiner can normally be reached on Tuesday, Wednesday, or Friday 7:00 to 3:30 (ET).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. James O. Wilson (703) 308-4624, may be contacted. The fax phone number for Group 1600, Art Unit 1623 is (703) 308-4556 or 305-3592.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-1235.

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JAMES O. WILSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

Leigh C. Maier
Patent Examiner
November 13, 2002